

REMARKS

This application has been reviewed in light of the Office Action dated May 15, 2003. Claims 1-4 and 7-10 are pending in this application. Non-elected Claims 5 and 6 have been cancelled, without prejudice or disclaimer of subject matter. Claims 1, 9, and 10, which are the independent claims, have been amended to define still more clearly what Applicant regard as his invention, in terms that distinguish over the art of record. Favorable reconsideration is requested.

The Office Action rejected Claims 1 and 7-10 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,325,488 B1 (Beerling et al.) in view of U.S. Patent No. 6,188,414 B1 (Wong et al.), and rejected Claims 2-4 as being unpatentable over Beerling et al. in view of Wong et al. and U.S. Patent No. 5,796,416 (Silverbrook).

Applicant submits that amended independent Claims 1, 9, and 10, together with the remaining claims dependent thereon, are patentably distinct from the proposed combination of the cited prior art at least for the following reasons.

The aspect of the present invention set forth in Claim 1 is an ink jet recording head comprising a flat substrate, wiring electrode, stepped surface, connection electrode, electrical wiring member, and sealing member. The flat substrate has an end face and front and back flat main surfaces, the front and back flat main surfaces having a larger area as compared to the end face. The wiring electrode is connected to an energy generating member formed on the front flat main surface of the substrate, the energy generating member being used to generate energy to discharge ink from a discharge port formed on the front flat main surface of the substrate. The step surface is provided at an

end of the substrate and is provided lower than the front flat main surface. The connection electrode is electrically connected to the wiring electrode and is provided on the stepped surface. The electrical wiring member is superimposed on the connection electrode and is electrically connected to the connection electrode through a bump electrode to supply an electrical signal or electrical power to the connection electrode. The sealing member electrically-conductively seals and covers the connection electrode, the bump electrode, and the electrical wiring member on the stepped surface in such a manner that the connection electrodes, the bump electrode, and the electrical wiring member are vertically overlapped with each other through the bump electrode.

One important feature of Claim 1 is that the sealing member electrically-conductively seals and covers the connection electrode, the bump electrode, and the electrical wiring member on the stepped surface in such a manner that the connection electrodes, the bump electrode, and the electrical wiring member are vertically overlapped with each other through the bump electrode. By having this feature, the top portion of the sealing member does not project from the discharge port so that the discharge port may be located as close as possible to the recording medium to perform high precision, ink-jet recording.

Beerling et al., as understood by Applicant, relates to an ink-jet printhead for wide area printing. The Office Action states (and Applicant agrees) that Beerling et al. does not teach or suggest a sealing member.

Wong et al, as understood by Applicant, relates to an ink-jet print head with a preformed substrate. The Office Action states that Wong et al. “teaches an ink jet print

head having a sealing member 110 which covers the electrical connections and [does] not extend beyond the discharge port” and that Figure 5B provides support for this assertion.

Applicant submits that Figure 5B of Wong et al. shows a sealing arrangement including a wire 508 that is conductively connecting electrodes 211 and 510 in a lateral direction.

Applicant has not found anything, however, in Wong et al. that would teach or suggest that the connection electrodes, the bump electrode, and the electrical wiring member are vertically overlapped with each other through the bump electrode.

Accordingly, Applicant submits that at least for this reason, Claim 1 is patentable over the proposed combination of Beerling et al. and Wong et al.

Independent Claims 9 and 10 include the same feature of a sealing member that electrically-conductively seals and covers the connection electrode, the bump electrode, and the electrical wiring member on the stepped surface in such a manner that the connection electrodes, the bump electrode, and the electrical wiring member are vertically overlapped with each other through the bump electrode, as discussed above in connection with Claim 1. Accordingly, Claims 9 and 10 are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

A review of the other art of record, including Silverbrook, has failed to reveal anything that, in Applicant’s opinion, would remedy the deficiencies of the art discussed above, as applied against the independent claims herein. Therefore, those claims are respectfully submitted to be patentable over the art of record.

The other rejected claims in this application depend from Claim 1 discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since

each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

This Amendment After Final Action is believed to place this application in condition for allowance and, therefore, its entry is believed proper under 37 C.F.R. § 1.116. Accordingly, entry of this Amendment After Final Action, as an earnest effort to advance prosecution and reduce the number of issues, is respectfully requested. Should the Examiner believe that issues remain outstanding, it is respectfully requested that the Examiner contact Applicant's undersigned attorney in an effort to resolve such issues and advance the case to issue.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

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